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NOTEWORTHY COLLECTION

California

Sequoiadendron giganteum (Lindl.) J. Buchholz (CUPRESSACEAE) (giant sequoia, big tree, or Sierra redwood).—Riverside Co., northwestern San Jacinto Mts., northeast of HW 243 about 18 highway km NW of Idyllwild, in the southern unit of the San Bernardino National Forest, on the northwestern flank of Black Mt. along both sides adjacent to and well back from the Black Mountain Trail, from upper Hall Canyon, through the sloping plateau or saddle near the westerly ridge, and into the final switchback ascent to the summit (elev. 2369 m). Species seen from 2036 to 2236 m elev. in mixed-conifer forest (Lower Montane Coniferous Forest) on sandy granitic soil; associates include: *Abies concolor, Pinus coulteri, P. ponderosa* var. *pacifica,* and *Quercus chrysolepis* dominant at lower elevations; *P. jeffreyi* and *P. lambertiana* dominant at higher elevations; *Calocedrus decurrens, P. flexilis,* and *Ribes nevadense* throughout most of area; 1 May 2009.

Collections (vouchers to be deposited at RSA, UC, and UCR). Tree DBH 65 cm, sterile, just left (as ascending) of trail on slope by large trunk lying across trail, N33 49.540, W116 45.977, 2036 m elev., *R. Schmid & M. Schmid 2009-1;* tree with abundant male cones, right (as ascending) of trail on slope covered with *Pteridium aquilinum* and near drainage (Indian Creek) with *Alnus rhombifolia,* N33 49.579, W116 45.891, 2066.5 m elev., *R. Schmid & M. Schmid 2009-2*; mature seed cones with opened cone scales and dislodged seeds, plus mix of sandy granitic soil and sparse duff, along Black Mountain Trail above drainage (Indian Creek) and below sloping plateau or saddle, ca. 2070 m elev., *R. Schmid & M. Schmid 2009-4;* tree DBH 20 cm, with medium-sized female cones, right (as ascending) side of trail in flat open area, N33 49.607, W116 45.854, 2093 m elev., *R. Schmid & M. Schmid 2009-5*; tree ca. 5.5 m high, with many, very large, immature female cones, just left (as ascending) of trail in flat open area, N33 49.713, W116 45.773; 2144 m elev., *R. Schmid & M. Schmid 2009-6.*

In addition to these collections made on 1 May 2009, we did a GPS census in the vicinity of the Black Mountain Trail, starting in upper Hall Canyon. The census revealed both in the canyon and upslope beyond it at least 157 individuals from 2036 to 2236 m elev. (ca. 0.7 km linear distance, ca. 0.1 km^2), plus an outlier sapling 450 m distant at 2361 m elev. near the summit of Black Mt. (2369 m). Our set of plots involved four groups at progressively higher elevations: (1) at the head of Indian Creek in the drainage (including vouchers 2009-1 and 2009-2); (2) on the slope coming out of the drainage (including voucher 2009-4); (3) at the sloping plateau or saddle (including vouchers 2009-5 and 2009-6); (4) on the northwest-facing slope closer to the summit. This species alien to southern California is regenerating prolifically on Black Mt., as revealed by multiple age classes, from seedlings and saplings (juveniles) about 20–60 cm tall to trees over 6 m tall, about 40 years old, and reproductively mature.

Previous knowledge. The monotypic California endemic *Sequoiadendron giganteum* is native to the western slope of the Sierra Nevada, where it occurs in isolated groves in mixed-conifer forest (Lower Montane Coniferous Forest) between 825 and 2700 m elev. The 67 groves are mostly of very restricted extent and/or threatened. They occur in a narrow strip measuring about 395 km long (northwest-southeast) and 19–21 km at the widest points (east-west) and extending over seven counties from southern Placer Co. southeasterly to southern Tulare Co. (Flint 2002; Willard 2000).

This species has been extensively planted in California as an ornamental, as part of afforestation attempts, and as reforestation efforts, especially post-fire revegetation ones. For example, Burns and Sauer (1992) noted that 22,900 seedlings of *S. giganteum* were planted in southern California in the San Gabriel Mts. alone, but neither this species nor 44 other alien conifer species planted there as part of afforestation projects "are invading adjacent natural habitats" (p. 49). However, Rogers (1986: p. 33) wrote: "On the San Bernardino [National Forest] about 5000 to 10,000 seedlings are planted each year, and at least one instance of natural regeneration from some of the early plantings has been observed." Rogers's "one instance" may well be the introduction of *S. giganteum* after the Aug. 1974 fire in Hall Canyon (Keeler-Wolf 1990; Cheng 2004) and its subsequent naturalization on Black Mt., which is the subject of the present preliminary report. Our extensive analysis of the print and Internet literature for the floristics and ecology of southern California suggests *S. giganteum* is possibly also naturalized in the San Gabriel Mts. of Los Angeles Co. and southwestern San Bernardino Co., and in the San Bernardino Mts. of San Bernardino Co.

Significance. First report and collections for Riverside Co. and the San Jacinto Mts. (see the database of the Consortium of California Herbaria, http://ucjeps.berkeley.edu/consortium). More importantly, first documented record for naturalization of this Sierra-Nevada endemic species in montane southern California. State and regional floras for California should acknowledge in their keys and descriptions such naturalizations. Details of these findings will be published elsewhere (Schmid and Schmid in press).

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Literature Cited

Burns, C. and J. Sauer. 1992. Resistance by natural vegetation in the San Gabriel Mountains of California to invasion by introduced conifers. Global Ecology and Biogeography Letters 2:46–51.

Cheng, S. (tech. ed). 2004. Forest Service Research Natural Areas in California. General Technical Report PSW-GRT-188. USDA Forest Service, Pacific Southwest Research Station, Albany, CA. Website http://www.fs.fed.us/psw/publications/documents/psw_gtr188/ [accessed 20 June 2011].

Flint, W. D. 2002. To find the biggest tree, revised ed. Sequoia Natural History Association, Three Rivers, CA.

KEELER-WOLF T. 1990. Ecological surveys of Forest Service Research Natural Areas in California. General Technical Report PSW(GTR)-125. USDA Forest Service, Pacific Southwest Research Station, Berkeley, CA. Website http://www.fs.fed.us/psw/publications/documents/psw_gtr125/ [accessed 20 June 2011].

ROGERS, R. R. 1986. Management of giant sequoia in the national forests of the Sierra Nevada, California. Pp. 32–36 *in* C. P. Weatherspoon, Y. R. Iwamoto, and D. D. Piirto (tech. coordinators). Proceedings of the workshop on management of giant sequoia, May 24–25, 1985, Reedley, California. General Technical Report PSW(GTR)-95. USDA Forest Service, Pacific Southwest Forest and Range Experimental Station, Berkeley, CA. Website http://www.fs.fed.us/psw/publications/documents/psw_gtr095/ [accessed 20 June 2011].

SCHMID, R. AND M. SCHMID. In Press. Naturalization of *Sequoiadendron giganteum* (Cupressaceae) in montane southern California. Aliso 30.

WILLARD, D. 2000. A guide to the sequoia groves of California. Yosemite Association, Yosemite National Park, CA.